

Harmonic Performance - Dynamic Range

1.0 OfCom Requirements

The UK amateur licence (Ref 1) requires tests to be carried out from time to time to ensure that:-

- a) The emitted frequency is as stable and free from unwanted emissions as the state of the technical development for amateur radio apparatus reasonably permits.
- b) Whatever class of emission is used, the bandwidth occupied by the emission is such that not more than 1% of the mean power of the transmission falls outside the nominal modulated carrier bandwidth.

2.0 State of the Art on Emission Limits

The data in the following table has been taken from the published specifications of the transceivers. The attenuation of the signals compared to the peak output were claimed to be better than the tabled figures.

HF Transceivers

Year	Model	SSB Carrier	Unwanted SSB	Spurious	Harmonics
1970s	FT101ZD	-40dB	-40dB	-40dB	-40dB
1970s	TS-802	-40dB	-50dB	-60dB	-40dB
2000	FT-747	-40dB	-50dB	-50dB	-40dB
2017	FT DX 3000D	-60dB	-60dB	-50dB	-60dB

VHF/UHF Transceivers

Year	Model	SSB Carrier	Unwanted SSB	Spurious	Harmonics
1985	FT-270R/RH	-	-	-60dB	-
2017	FT-2980E	-	-	-60dB	-
2017	FT-2DE	-	-	-60dB	-

Ref. 1: Ofcom – Amateur Radio Licence, Guidance for Licensees (July 2017)